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FOLEY HOAG, LLP  
PATENT GROUP, WORLD TRADE CENTER WEST  
155 SEAPORT BLVD  
BOSTON, MA 02110

EXAMINER

LY, ANH

ART UNIT	PAPER NUMBER
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2172

DATE MAILED: 11/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/902,343

Applicant(s)

HARRIS, LARRY R.

Examiner

Anh Ly

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 July 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-77 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-77 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

**DETAILED ACTION**

1. This Office Action is response to Applicant's communications filed on 07/01/2003.
2. Claims 1-77 are pending in this application.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-5, 7-8, 65-69 and 71-72 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,601,026 issued to Appelt et al (hereinafter Appelt) in view of US Patent No. 5,752,061 issued to Whittaker et al. (hereinafter Whittaker).

With respect to claim 1, Appelt discloses providing query information (user provides query to extract information from the system via natural language user interface: see fig. 1, item 110 and col. 10, lines 65-67 and col. 11, lines 1-38);

processing the query information with a natural language processor (the natural language query system 100 of fig. 1 is used to extracted information from the system by user via user interface 110: col. 6, lines 20-25 and lines 38-50);

and generating the SQL search query based on the processed query information and the identified database information (the query is converted into SQL query for executing the relational database based on the natural language query: col. 6, lines 12-25).

Appelt discloses a natural language information querying system comprising a method for searching text document based on the natural language query (col. 2, lines 20-59). The query can be stated in a natural language such as English and the system has a capability to convert natural language into SQL query (col. 6, lines 20-27), and the relational database is executed by using SQL to extract the information (col. 6, lines 12-18). Appelt does not explicitly teach identifying database information based on at least one of, at least one database column information, at least one database row information, and at least one database element.

However, Whittaker discloses relational database and row headings and column headings or row header and column header as row information and column information of at least one database element (col. 2, lines 45-58, col. 3, lines 8-30 and col. 13, lines 22-32).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Appelt with the teachings of Whittaker so as to have one database element information such as row and column header (col. 3, lines 8-30 and col. 13, lines 22-32). This combination would have made a method for searching for a database using a specialized database query language such as SQL (Whittaker – col. 2, lines 40-67 and col. 3, lines 1-6) and searching the text

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document stored in the database based on the natural language query (Appelt – col. 2, lines 20-40) and having a natural language interface handling commonly encountered natural language expressions, extracting the topic of interest for the user and performing topical searches beyond the exact words entered by the user (Appelt – col. 3, lines 20-65) in the natural language query searching environment.

With respect to claim 2, Appelt discloses wherein providing query information includes providing a natural language expression (natural language user interface handles commonly natural language expressions: col. 3, lines 50-57).

With respect to claim 3, Appelt discloses wherein providing query information includes providing query information via a network (natural language system 100 couple to the an Internet network: col. 3, lines 22-26 and col. 5, lines 5-15).

With respect to claim 4, Appelt discloses wherein providing query information includes receiving a HTTP message (various communication protocols such as HTTP: col. 6, lines 37-40).

With respect to claim 5, Appelt discloses wherein providing query information includes providing at least one query term (the natural language is parsed by a parser: col. 8, lines 30-35 and col. 11, lines 5-10).

With respect to claims 7 and 8, Appelt discloses a method for SQL query to a database as discussed in claim 1.

Appelt discloses a natural language information querying system comprising a method for searching text document based n the natural language query (col. 2, lines 20-59). The query can be stated in a natural language such as English and the system

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has a capability to convert natural language into SQL query (col. 6, lines 20-27), and the relational database is executed by using SQL to extract the information (col. 6, lines 12-18). Appelt does not explicitly teach identifying at least one of at least one database column header- and at least one database row header and identifying database information further includes determining at least one relationship between at least two rows or at least two columns.

However, Whittaker discloses relational database and row headings and column headings or row header and column header as row information and column information of at least one database element (col. 2, lines 45-58, col. 3, lines 8-30 and col. 13, lines 22-32).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Appelt with the teachings of Whittaker so as to have one database element information such as row and column header (col. 3, lines 8-30 and col. 13, lines 22-32). This combination would have made a method for searching for a database using a specialized database query language such as SQL (Whittaker – col. 2, lines 40-67 and col. 3, lines 1-6) and searching the text document stored in the database based on the natural language query (Appelt – col. 2, lines 20-40) and having a natural language interface handling commonly encountered natural language expressions, extracting the topic of interest for the user and performing topical searches beyond the exact words entered by the user (Appelt – col. 3, lines 20-65) in the natural language query searching environment.

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Claim 65 is essentially the same as claim 1 except that it is directed to a computer product for providing a SQL search query for a database rather than a method ('026 of user provides query to extract information from the system via natural language user interface: see fig. 1, item 110 and col. 10, lines 65-67 and col. 11, lines 1-38; (the natural language query system 100 of fig. 1 is used to extracted information from the system by user via user interface 110: col. 6, lines 20-25 and lines 38-50; and the query is converted into SQL query for executing the relational database based on the natural language query: col. 6, lines 12-25; and '016 of col. 2, lines 45-58, col. 3, lines 8-30 and col. 13, lines 22-32), and is rejected for the same reason as applied to the claim 1 hereinabove.

Claim 66 is essentially the same as claim 2 except that it is directed to a computer product for providing a SQL search query for a database rather than a method (col. 4, lines 33-35), and is rejected for the same reason as applied to the claim 2 hereinabove.

Claim 67 is essentially the same as claim 3 except that it is directed to a computer product for providing a SQL search query for a database rather than a method (natural language system 100 couple to the an Internet network: col. 3, lines 22-26 and col. 5, lines 5-15), and is rejected for the same reason as applied to the claim 3 hereinabove.

Claim 68 is essentially the same as claim 4 except that it is directed to a computer product for providing a SQL search query for a database rather than a method

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(various communication protocols such as HTTP: col. 6, lines 37-40), and is rejected for the same reason as applied to the claim 4 hereinabove.

Claim 69 is essentially the same as claim 5 except that it is directed to a computer product for providing a SQL search query for a database rather than a method (the natural language is parsed by a parser: col. 8, lines 30-35 and col. 11, lines 5-10), and is rejected for the same reason as applied to the claim 5 hereinabove.

Claims 71-72 are essentially the same as claims 7-8 except that they are directed to a computer product for providing a SQL search query for a database rather than a method (col. 2, lines 45-58, col. 3, lines 8-30 and col. 13, lines 22-32), and are rejected for the same reason as applied to the claims 7-8 hereinabove.

5. Claims 6 and 70 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,601,026 issued to Appelt et al (hereinafter Appelt) in view of US Patent No. 5,752,061 issued to Whittaker et al. (hereinafter Whittaker) and further in view of US Patent No. 6,446,064 issued to Livowsky.

With respect to claim 6, Appelt in view of Whittaker discloses a method for providing SQL search query for a database as discussed in claim 1.

Appelt discloses a natural language information querying system comprising a method for searching text document based n the natural language query (col. 2, lines 20-59). The query can be stated in a natural language such as English and the system has a capability to convert natural language into SQL query (col. 6, lines 20-27), and the relational database is executed by using SQL to extract the information (col. 6, lines 12-



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18). Appelt does not explicitly teach identifying at least one of at least one database column header- and at least one database row header and identifying database information further includes determining at least one relationship between at least two rows or at least two columns. But Whittaker discloses relational database and row headings and column headings or row header and column header as row information and column information of at least one database element (col. 2, lines 45-58, col. 3, lines 8-30 and col. 13, lines 22-32). In combination of Appelt and Whittaker do not explicitly teach determining at least one synonym based on the query information.

However, Livowsky discloses generating synonyms of the query (col. 4, lines 33-35).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Appelt in view of Whittaker with the teachings of Livowsky so as to have a method for generating at least one synonym based on the query (Livowsky - col. 4, lines 33-35) and synonyms are used to form alternate search words (col. 4, lines 52-61). This combination would have made a method for searching a database via a user friendly interface that can access natural language (Livowsky), searching for a database using a specialized database query language such as SQL (Whittaker – col. 2, lines 40-67 and col. 3, lines 1-6) and searching the text document stored in the database based on the natural language query (Appelt – col. 2, lines 20-40) and having a natural language interface handling commonly encountered natural language expressions, extracting the topic of interest for

the user and performing topical searches beyond the exact words entered by the user (Appelt – col. 3, lines 20-65) in the natural language query searching environment.

Claim 70 is essentially the same as claim 6 except that it is directed to a computer product for providing a SQL search query for a database rather than a method (col. 4, lines 33-35), and is rejected for the same reason as applied to the claim 6 hereinabove.

6. Claims 9-11, 13-27, 29-45, 55-60, 73-75 and 77 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,601,026 issued to Appelt et al (hereinafter Appelt) in view of US Patent No. 6,094,649 issued to Bowen et al. (hereinafter Bowen).

With respect to claim 9, Appelt discloses providing query information (user provides query to extract information from the system via natural language user interface: see fig. 1, item 110 and col. 10, lines 65-67 and col. 11, lines 1-38);

processing the query information with a natural language processor (the natural language query system 100 of fig. 1 is used to extracted information from the system by user via user interface 110: col. 6, lines 20-25 and lines 38-50); and

generating the query based on the processed query information (the query is converted into SQL query for executing the relational database based on the natural language query: col. 6, lines 12-25).

Appelt discloses a natural language information querying system comprising a method for searching text document based n the natural language query (col. 2, lines

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20-59). The query can be stated in a natural language such as English and the system has a capability to convert natural language into SQL query (col. 6, lines 20-27), and the relational database is executed by using SQL to extract the information (col. 6, lines 12-18), and search terms in natural language query are an internal query format and submitted to the search engine (col. 6, lines 40-50). Appelt does not explicitly teach determining at least one text document keyword and an associated keyword context and the keyword, and the associated keyword context.

However, Bowen discloses keywords of the documents are entered in the database to support document retrieval through the database query interface using SQL or another query language (col. 3, lines 25-54) and a keyword search is a pattern-matching search and keywords may contain wildcards or regular expressions (col. 5, lines 55-67).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Appelt with the teachings of Bowen so as to have keyword for text document and keyword search and indexes that associates keywords with resource locators (Bowen – col. 3, lines 25-54 and col. 4, lines 52-64). This combination would have made a method for searching for a database by using a keyword searching to locate and retrieve desired information from the database without knowing detail details of the database's internal organization (Bowen – col. 5, lines 15-25) and searching the text document stored in the database based on the natural language query (Appelt – col. 2, lines 20-40) and having a natural language interface handling commonly encountered natural language expressions, extracting the

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topic of interest for the user and performing topical searches beyond the exact words entered by the user (Appelt – col. 3, lines 20-65) in the natural language query searching environment.

With respect to claim 10, Appelt discloses wherein providing query information includes providing a natural language expression (natural language user interface handles commonly natural language expressions: col. 3, lines 50-57).

With respect to claim 11, Appelt discloses wherein providing query information includes receiving a HTTP message (various communication protocols such as HTTP: col. 6, lines 37-40).

With respect to claim 13, Appelt discloses wherein providing query information includes providing query information via a network (natural language system 100 couple to the an Internet network: col. 3, lines 22-26 and col. 5, lines 5-15).

With respect to claim 14, Appelt discloses receiving the query (user provides query to extract information from the system via natural language user interface: see fig. 1, item 110 and col. 10, lines 65-67 and col. 11, lines 1-38);

translating the query to a customized query based on the at least one data source (translation of natural language query into SQL query to go with the information of data source: col. 6, lines 18-27 and lines 40-52);

applying the customized query to the at least one data source (using the SQL query, customized query, which are translated from natural language query to execute the database or the query is submitted to information extraction query engine: col. 6, lines 40-52);

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receiving results from the customized query (the search result is sent to the user: col. 4, lines 22-25),

and communicating the results to a device on the network (the search result is sent back to handheld or mobile device over the Internet network: col. 4, lines 22-34).

Appelt discloses a natural language information querying system comprising a method for searching text document based on the natural language query (col. 2, lines 20-59). The query can be stated in a natural language such as English and the system has a capability to convert natural language into SQL query (col. 6, lines 20-27), and the relational database is executed by using SQL to extract the information (col. 6, lines 12-18), and the search result can be provided to a text-to-speech system which looks up each word in a dictionary to translate the text to speech for the user (col. 13, lines 38-45). Appelt does not explicitly teach for the at least one data source, providing at least one dictionary, wherein providing the at least one dictionary.

However, Bowen discloses a dictionary for a structured database such as a relational database (col. 4, lines 42-51, col. 7, lines 62-67 and col. 8, lines 1-18).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Appelt with the teachings of Bowen so as to have dictionary for the structured database such as a relational database (col. 8, lines 1-18). This combination would have made a method for searching for a database, which is defined by a dictionary (col. 4, lines 42-51) and using a keyword searching to locate and retrieve desired information from the database without knowing detail details of the database's internal organization (Bowen – col. 5,

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lines 15-25) and searching the text document stored in the database based on the natural language query (Appelt – col. 2, lines 20-40) and having a natural language interface handling commonly encountered natural language expressions, extracting the topic of interest for the user and performing topical searches beyond the exact words entered by the user (Appelt – col. 3, lines 20-65) in the natural language query searching environment.

With respect to claims 15-17, Appelt discloses a method for distributed query as discussed in claim 14.

Appelt discloses a natural language information querying system comprising a method for searching text document based on the natural language query (col. 2, lines 20-59). The query can be stated in a natural language such as English and the system has a capability to convert natural language into SQL query (col. 6, lines 20-27), and the relational database is executed by using SQL to extract the information (col. 6, lines 12-18), and the search result can be provided to a text-to-speech system which looks up each word in a dictionary to translate the text to speech for the user (col. 13, lines 38-45). Appelt does not explicitly teach wherein providing at least one dictionary includes providing at least one of providing at least one dictionary based on a database and providing at least one dictionary based on at least one textual document, providing at least one of textual document and receiving at least one of a natural language query and at least one keyword.

However, Bowen discloses a dictionary for a structured database such as a relational database (col. 4, lines 42-51, col. 7, lines 62-67 and col. 8, lines 1-18) and text

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document (col. 8, lines 31-45 and col. 9, lines 1-22) and a keyword search is a pattern-matching search and keywords may contain wildcards or regular expressions (col. 5, lines 55-67).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Appelt with the teachings of Bowen so as to have dictionary for the structured database such as a relational database (col. 8, lines 1-18). This combination would have made a method for searching for a database, which is defined by a dictionary (col. 4, lines 42-51) and using a keyword searching to locate and retrieve desired information from the database without knowing detail details of the database's internal organization (Bowen – col. 5, lines 15-25) and searching the text document stored in the database based on the natural language query (Appelt – col. 2, lines 20-40) and having a natural language interface handling commonly encountered natural language expressions, extracting the topic of interest for the user and performing topical searches beyond the exact words entered by the user (Appelt – col. 3, lines 20-65) in the natural language query searching environment.

With respect to claims 18-24, Appelt discloses wherein receiving the query includes receiving the query via a network (col. 3, lines 22-26 and col. 5, lines 5-19); wherein receiving the query includes receiving at least one relational operator (col. 16, lines 1-25 and also col. 1, lines 42-50); wherein providing at least one customized dictionary further includes, identifying the at least one data source, and, surveying the at least one data source based on the identity of the at least one data source (col. 5, lines

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5-37); wherein translating the natural language query includes translating the query from a first language to a distinct second language (col. 6, lines 12-27); wherein translating the query includes processing the query using a natural language processor (col. 5, lines 5-15 and col. 6, lines 12-27); wherein translating the natural language query includes performing a spell check (syntactic or grammar check: col. 8, lines 42-55 and col. 9, lines 28-51); and wherein translating the query includes performing a context evaluation of the query (col. 6, lines 12-27).

With respect to claims 25-27, Appelt discloses wherein translating the query includes determining a data format of the data source (text format: col. 5, lines 5-15); wherein translating the query includes identifying at least one abbreviation in the natural language query (col. 9, lines 15-27); and wherein translating the query includes identifying at least one abbreviation in the data source (col. 9, lines 15-27).

28. A method according to claim 14, wherein translating the query includes identifying at least one of at least one column header, at least one row header, and at least one textual term.

With respect to claims 29-37, Appelt discloses wherein translating the query includes identifying at least one word variation (); wherein translating the query includes identifying at least one phrase variation (); wherein translating the query includes identifying at least one code based on the data source (); wherein translating the query includes generating at least one phonetic equivalent (col. 13, lines 10-20 and lines 40-50); wherein translating the query includes identifying a Frequently Asked Question (FAQ) (col. 3, lines 65-67 and col. 4, lines 1-12); including creating a log file that



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includes at least one of the query, the customized query, the customized query results, and a time of query (col. 2, lines 50-58 and col. 4, lines 22-32); comprising associating at least one of at least one identity and at least one privilege with the query (col. 2, lines 50-58); performing at least one filtering of the results from the customized query (col. 4, lines 22-32 and col. 5, lines 5-35) and wherein communicating the results to a device on the network includes generating a SGML document (markup language document such as XML document: col. 6, lines 27-36).

With respect to claims 38-40, Appelt discloses wherein communicating the results to a device on the network includes generating at least one of a graph, a pie chart, a spreadsheet, and a histogram based on the results of the customized query (spreadsheet software: col. 15, lines 5-10); wherein communicating the results to a device on the network includes communicating the results to a server (col. 2, lines 35-59); and wherein communicating the results to a device on the network includes at least one of generating an email, generating an instant-message, and generating a voice reply (user's voice: col. 4, lines 22-34 and col. 13, lines 8-32).

With respect to claims 41-42, Appelt discloses a method for distributed query as discussed in claim 14.

Appelt discloses a natural language information querying system comprising a method for searching text document based on the natural language query (col. 2, lines 20-59). The query can be stated in a natural language such as English and the system has a capability to convert natural language into SQL query (col. 6, lines 20-27), and the relational database is executed by using SQL to extract the information (col. 6, lines 12-

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18), and the search result can be provided to a text-to-speech system which looks up each work in a dictionary to translate the text to speech for the user (col. 13, lines 38-45). Appelt does not explicitly teach transferring the query to a broadcast dictionary and receiving results from at least one of at least one text document, at least one database, and at least one broadcast dictionary.

However, Bowen discloses a dictionary for a structured database such as a relational database (col. 4, lines 42-51, col. 7, lines 62-67 and col. 8, lines 1-18) and text document (col. 8, lines 31-45 and col. 9, lines 1-22).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Appelt with the teachings of Bowen so as to have dictionary for the structured database such as a relational database (col. 8, lines 1-18). This combination would have made a method for searching for a database, which is defined by a dictionary (col. 4, lines 42-51) and using a keyword searching to locate and retrieve desired information from the database without knowing detail details of the database's internal organization (Bowen – col. 5, lines 15-25) and searching the text document stored in the database based on the natural language query (Appelt – col. 2, lines 20-40) and having a natural language interface handling commonly encountered natural language expressions, extracting the topic of interest for the user and performing topical searches beyond the exact words entered by the user (Appelt – col. 3, lines 20-65) in the natural language query searching environment.

With respect to claim 43-45, Appelt discloses wherein applying the customized query includes applying at least one of a SQL query and search expression (col. 6, lines 12-27); wherein providing at least one customized dictionary further includes conditioning the application of the customized query based on at least one of an identity and a profile associated with the natural language query (col. 6, lines 38-61, col. 10, lines 65-67 and col. 11, lines 1-38); and wherein applying the customized query further includes conditioning the application of the customized query based on the data source (col. 2, lines 35-58, col. 6, lines 38-52 and col. 12, lines 36-48).

With respect to claim 55, Appelt discloses at least one data source (database storing text associated with the extracted information: vol. 5, lines 30-38 and see fig. 1, item 109);

a processor having instructions for receiving the query (receiving entered query from user via user interface: col. 10, lines 65-67 and col. 11, lines 1-13);

and applying the query to the at least one data source (SQL query to extract information from a database: col. 6, lines 12-20).

Appelt discloses a natural language information querying system comprising a method for searching text document based on the natural language query (col. 2, lines 20-59). The query can be stated in a natural language such as English and the system has a capability to convert natural language into SQL query (col. 6, lines 20-27), and the relational database is executed by using SQL to extract the information (col. 6, lines 12-18), and the search result can be provided to a text-to-speech system which looks up each word in a dictionary to translate the text to speech for the user (col. 13, lines 38-

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45). Appelt does not explicitly teach generating a customized query based on the at least one dictionary based on the at least one data source.

However, Bowen discloses a dictionary for a structured database such as a relational database (col. 4, lines 42-51, col. 7, lines 62-67 and col. 8, lines 1-18).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Appelt with the teachings of Bowen so as to have dictionary for the structured database such as a relational database (col. 8, lines 1-18). This combination would have made a method for searching for a database, which is defined by a dictionary (col. 4, lines 42-51) and using a keyword searching to locate and retrieve desired information from the database without knowing detail details of the database's internal organization (Bowen – col. 5, lines 15-25) and searching the text document stored in the database based on the natural language query (Appelt – col. 2, lines 20-40) and having a natural language interface handling commonly encountered natural language expressions, extracting the topic of interest for the user and performing topical searches beyond the exact words entered by the user (Appelt – col. 3, lines 20-65) in the natural language query searching environment.

With respect to claim 56, Appelt discloses wherein the data source includes at least one of at least one text document and at least one database (a database 109 in fig 1 and text-based document, col. 5, lines 5-44).

With respect to claim 57, Appelt discloses including a survey engine to examine the at least one data source (col. 5, lines 5-44).

With respect to claim 58, Appelt discloses including a network interface to receive the query (col. 10, lines 65-67 and col. 11, lines 1-5).

With respect to claim 59, Appelt discloses including a memory to store privilege information associated with the at least one data source (col. 5, lines 30-36).

With respect to claim 60, Appelt discloses including a distinct second processor to supply the query (col. 15, lines 10-25).

Claim 73 is essentially the same as claim 9 except that it is directed to a computer product for providing a query for a text document rather than a method ('026 of user provides query to extract information from the system via natural language user interface: see fig. 1, item 110 and col. 10, lines 65-67 and col. 11, lines 1-38; the natural language query system 100 of fig. 1 is used to extracted information from the system by user via user interface 110: col. 6, lines 20-25 and lines 38-50; and the query is converted into SQL query for executing the relational database based on the natural language query: col. 6, lines 12-25; and '649 of col. 3, lines 25-54 and col. 5, lines 55-67), and is rejected for the same reason as applied to the claim 9 hereinabove.

Claim 74 is essentially the same as claim 10 except that it is directed to a computer product for providing a query for a text document rather than a method (col. 4, lines 33-35), and is rejected for the same reason as applied to the claim 10 hereinabove.

Claim 75 is essentially the same as claim 11 except that it is directed to a computer product for providing a query for a text document rather than a method

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(various communication protocols such as HTTP: col. 6, lines 37-40), and is rejected for the same reason as applied to the claim 11 hereinabove.

Claim 77 is essentially the same as claim 13 except that it is directed to a computer product for providing a query for a text document rather than a method (natural language system 100 couple to the an Internet network: col. 3, lines 22-26 and col. 5, lines 5-15), and is rejected for the same reason as applied to the claim 13 hereinabove.

7. Claims 12 and 76 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,601,026 issued to Appelt et al (hereinafter Appelt) in view of US Patent No. 6,094,649 issued to Bowen et al. (hereinafter Bowen) and further in view of US Patent No. 6,446,064 issued to Livowsky.

With respect to claim 12, Appelt in view of Bowen discloses a method for providing a query for a text document as discussed in claim 9.

Appelt discloses a natural language information querying system comprising a method for searching text document based n the natural language query (col. 2, lines 20-59). The query can be stated in a natural language such as English and the system has a capability to convert natural language into SQL query (col. 6, lines 20-27), and the relational database is executed by using SQL to extract the information (col. 6, lines 12-18). Appelt does not explicitly teach determining at least one text document keyword and an associated keyword context. But Bowen discloses keywords of the documents are entered in the database to support document retrieval through the database query

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interface using SQL or another query language (col. 3, lines 25-54) and a keyword search is a pattern-matching search and keywords may contain wildcards or regular expressions (col. 5, lines 55-67). In combination of Appelt and Bowen do not explicitly teach determining at least one synonym based on the query information.

However, Livowsky discloses generating synonyms of the query (col. 4, lines 33-35).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Appelt in view of Bowen with the teachings of Livowsky so as to have a method for generating at least one synonym based on the query (Livowsky - col. 4, lines 33-35) and synonyms are used to form alternate search words (col. 4, lines 52-61). This combination would have made a method for searching a database via a user friendly interface that can access natural language (Livowsky), having keyword for text document and keyword search and indexes that associates keywords with resource locators (Bowen – col. 3, lines 25-54 and col. 4, lines 52-64). This combination would have made a method for searching for a database by using a keyword searching to locate and retrieve desired information from the database without knowing detail details of the database's internal organization (Bowen – col. 5, lines 15-25) and searching the text document stored in the database based on the natural language query (Appelt – col. 2, lines 20-40) and having a natural language interface handling commonly encountered natural language expressions, extracting the topic of interest for the user and performing topical searches beyond the

exact words entered by the user (Appelt – col. 3, lines 20-65) in the natural language query searching environment.

Claim 76 is essentially the same as claim 12 except that it is directed to a computer product for providing a query for a text document rather than a method (col. 4, lines 33-35), and is rejected for the same reason as applied to the claim 6 hereinabove.

8. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,601,026 issued to Appelt et al (hereinafter Appelt) in view of US Patent No. 6,094,649 issued to Bowen et al. (hereinafter Bowen) and further in view of US Patent No. 5,752,061 issued to Whittaker et al. (hereinafter Whittaker).

With respect to claim 28, Appelt in view of Bowen discloses a method for distributing a query as discussed in claim 14.

Appelt discloses a natural language information querying system comprising a method for searching text document based n the natural language query (col. 2, lines 20-59). The query can be stated in a natural language such as English and the system has a capability to convert natural language into SQL query (col. 6, lines 20-27), and the relational database is executed by using SQL to extract the information (col. 6, lines 12-18). Appelt does not explicitly teach for the at least one data source, providing at least one dictionary, wherein providing the at least one dictionary. But Bowen discloses a



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dictionary for a structured database such as a relational database (col. 4, lines 42-51, col. 7, lines 62-67 and col. 8, lines 1-18). In combination Appelt and Bowen do not explicitly teach identifying at least one of at least one column header, at least one database row header, and at least one textual term.

However, Whittaker discloses relational database and row headings and column headings or row header and column header as row information and column information of at least one database element (col. 2, lines 45-58, col. 3, lines 8-30 and col. 13, lines 22-32) and textual term (col. 8, lines 58-67, col. 9, lines 1-5).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Appelt in view of Bowen with the teachings of Whittaker so as to have one database element information such as row and column header (col. 3, lines 8-30 and col. 13, lines 22-32). This combination would have made a method for searching for a database using a specialized database query language such as SQL (Whittaker – col. 2, lines 40-67 and col. 3, lines 1-6) and searching the text document stored in the database based on the natural language query (Appelt – col. 2, lines 20-40) and having a natural language interface handling commonly encountered natural language expressions, extracting the topic of interest for the user and performing topical searches beyond the exact words entered by the user (Appelt – col. 3, lines 20-65) in the natural language query searching environment.

9. Claims 46-54 and 61-64 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,601,026 issued to Appelt et al (hereinafter Appelt).

With respect to claim 46, Appelt discloses an initiating device for providing a query (a natural language query engine to receive query from user via user interface; see fig. 1, item 104 and 110 and col. 5, lines 1-36);

at least one data source (database storing text associated with the extracted information: vol. 5, lines 30-38 and see fig. 1, item 109);

a processor in communication with the initiating device and the at least one data source (the system 100 for providing information in response to a natural language query from one to more users: col. 5, lines 5-10);

the processor having instructions for receiving the query (receiving entered query from user via user interface: col. 10, lines 65-67 and col. 11, lines 1-13);

processing the query to generate a customized query based on the at least one data source (generating SQL query from natural language query: col. 6, lines 20-25);

applying the customized query to the data source (SQL query to extract information from a database: col. 6, lines 12-20);

and receiving results from the customized query (the search result is sent back to the users as shown in figs. 7 and 8: col. 4, lines 22-30 and col. 6, lines 20-26).

Appelt discloses a natural language information querying system comprising a method for searching text document based on the natural language query (col. 2, lines 20-59). The query can be stated in a natural language such as English and the system has a capability to convert natural language into SQL query (col. 6, lines 20-27), and the

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relational database is executed by using SQL to extract the information (col. 6, lines 12-18), and the search result can be provided to a text-to-speech system which looks up each word in a dictionary to translate the text to speech for the user (col. 13, lines 38-45). Appelt does not clearly teach processing the query to generate a customized query based on the at least one data source.

However, Appelt discloses SQL query is generated from a natural language query such as an English question and it converted into SQL query in order to extract/retrieve information stored in a relational database where the desired of interest information of user is extracted via SQL language (col. 6, lines 12-26).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to utilize the SQL query as customized query to extract information from the database as taught by Appelt (col. 6, lines 12-26) because it would have made the method for searching the text document stored in the database based on the natural language query (Appelt – col. 2, lines 20-40) and having a natural language interface handling commonly encountered natural language expressions, extracting the topic of interest for the user and performing topical searches beyond the exact words entered by the user (Appelt – col. 3, lines 20-65) in the natural language query searching environment.

With respect to claim 47, Appelt discloses wherein the initiating device includes a microprocessor-controlled device (see fig. 12, item 610 and 630 and col. 15, lines 10-23).

With respect to claim 48, Appelt discloses wherein the query includes at least one word (col. 4, lines 4-10).

With respect to claim 49, Appelt discloses wherein the query includes at least one relational operator (col. 16, lines 1-25, also see col. 1, lines 42-50).

With respect to claim 50, Appelt discloses including at least one first server in communication with the initiating device and the data source (col. 5, lines 30-35, also col. 2, lines 35-60).

With respect to claim 51, Appelt discloses including at least one database in communication with the second server (col. 2, lines 35-60).

With respect to claim 52, Appelt discloses including at least one database in communication with the at least one first server and the at least one data source (col. 2, lines 35-60 and col. 5, lines 30-35).

With respect to claim 53, Appelt discloses including at least one third server in communication with the second server, to receive at least one of the customized query or the natural language query from the second server (generating SQL query from natural language query: col. 6, lines 20-25 and col. 2, lines 35-60).

With respect to claim 54, Appelt discloses wherein the at least one data source includes at least one of at least one text document and at least one database (a database 109 in fig 1 and text-based document, col. 5, lines 5-44).

With respect to claim 61, Appelt discloses means for providing a query (a natural language query engine to receive query from user via user interface; see fig. 1, item 104 and 110 and col. 5, lines 1-36);

data source means (database storing text associated with the extracted information: vol. 5, lines 30-38 and see fig. 1, item 109);

means for receiving the query, submitting the query to a natural language processor (user interface for entering entry or query to the system: col. 10, lines 65-67 and col. 11, lines 1-10);

and generating a customized query based on the query and the data source means (generating SQL query from natural language query: col. 6, lines 20-25).

Appelt discloses a natural language information querying system comprising a method for searching text document based on the natural language query (col. 2, lines 20-59). The query can be stated in a natural language such as English and the system has a capability to convert natural language into SQL query (col. 6, lines 20-27), and the relational database is executed by using SQL to extract the information (col. 6, lines 12-18), and the search result can be provided to a text-to-speech system which looks up each word in a dictionary to translate the text to speech for the user (col. 13, lines 38-45). Appelt does not clearly teach processing the query to generate a customized query based on the at least one data source.

However, Appelt discloses SQL query is generated from a natural language query such as an English question and it converted into SQL query in order to extract/retrieve information stored in a relational database where the desired of interest information of user is extracted via SQL language (col. 6, lines 12-26).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to utilize the SQL query as customized query to extract information

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from the database as taught by Appelt (col. 6, lines 12-26) because it would have made the method for searching the text document stored in the database based on the natural language query (Appelt – col. 2, lines 20-40) and having a natural language interface handling commonly encountered natural language expressions, extracting the topic of interest for the user and performing topical searches beyond the exact words entered by the user (Appelt – col. 3, lines 20-65) in the natural language query searching environment.

With respect to claim 62, Appelt discloses wherein the means for providing a query includes a microprocessor-controlled device (see fig. 12, item 610 and 630 and col. 15, lines 10-23).

With respect to claim 63, Appelt discloses wherein the data source means includes at least one of at least one database and at least one text document (a database 109 in fig 1 and text-based document, col. 5, lines 5-44).

With respect to claim 64, Appelt discloses wherein the means for receiving the query includes a processor (see fig. 12 and col. 15, lines 10-23).

***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patent No. 6,460,029 issued to Fries et al.

US Patent No. 6,081,774 issued to de Hita et al.

US Patent No. 5,713,020 issued to Reiter et al.

US Patent No. 6,571,241 issued to Nosohara

US Patent No. 6,460,043 issued to Tabbara et al.

US Patent No. 6,633,846 issued to Bennett et al.

**Contact Information**

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anh Ly whose telephone number is 703 306-4527 or via E-Mail: ANH.LY@USPTO.GOV. The examiner can normally be reached on 7:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Vu can be reached on 703 305-4393. The fax phone number for the organization where this application or proceeding is assigned is 703 746-7239.

Any response to this action should be mailed to:


Commissioner of Patents and Trademarks


Washington, D.C. 20231

or faxed to: Central Office (703) 872-9306 (effective from 08/04/2003).

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Fourth Floor (receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308-6606 or 703 305-3900.

AL   
Nov. 12<sup>th</sup>, 2003

  
KIM VU  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100